



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,318	07/30/2001	Joo Yeol Lee	P-217	8002
34610	7590	04/22/2004	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			LEE, JOHN J	
			ART UNIT	PAPER NUMBER
			2684	2

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/916,318

Applicant(s)

LEE, JOO YEOL

Examiner

JOHN J LEE

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8, 23, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 8: the limitation "as it is" is indefinite because it is not clear what is claimed.

Re claim 23 and 24: the limitation "receiving/transmitting channel comprises one or more of the elements from the group..." is indefinite because it can't be the channel comprises the hardware devices.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 – 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope, Jr. et al. (US Patent number 6,654,616) in view of Struhsaker et al. (US Patent number 6,351,456).

Regarding **claim 1**, Pope discloses that an integrated local multipoint distribution system (LMDS) (competitive environment system with WLL) (Fig. 4 and column 6, lines

11 – 27) and wireless local area network (WLAN) (Fig. 4 and column 5, lines 59 – column 6, lines 10) transceiver (Fig. 3) apparatus which connects a local multipoint distribution system (LMDS) base station (20 in Fig. 2) and a plurality of wireless local area network (WLAN) terminals (10 in Fig. 2) (Fig. 3, 4 and column 5, lines 59 – column 6, lines 27). Pope teaches that a LMDS transceiver section (43 in Fig. 4) adapted to connect to the LMDS base station (42b, 42c in Fig. 4) to transmit and receive a radio signal to and from the LMDS base station (Fig. 4 and column 5, lines 59 – column 6, lines 47, where teaches communicating between LMDS base station and LMDS transceivers). Pope teaches that a WLAN transceiver section (42a in Fig. 4) adapted to connect to the plurality of WLAN terminals (10 in Fig. 4) to transmit and receive a radio signal to and from the plurality of WLAN terminals (Fig. 4 and column 5, lines 59 – column 6, lines 47, where teaches communicating with radio signal between WLAN terminals and WLAN transceiver). Pope teaches that an antenna unit (Fig. 3) for receiving the radio signal from the LMDS base station or the plurality of WLAN terminals and separately applying the received radio signal to a corresponding processor (Fig. 3, 4 and column 5, lines 21 – column 6, lines 47, where teaches antenna unit receives the radio signal from plurality of WLAN terminals and LMDS base station and performing the signal by processor).

Pope does not exactly disclose the limitation “wireless local loop (WLL) base station/transceiver (system)”. However, Struhsaker discloses the limitation “wireless local loop (WLL) base station/transceiver (system)” (Fig. 2, column 5, lines 15 – 25, column 8, lines 23 – 40, where teaches the WLL system comprises one or more base

Art Unit: 2684

transceiver site and each remote unit includes a radio transceiver and an antenna system). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Pope system as taught by Struhsaker. Doing so would enhance the communication reliability in wireless communication system.

Regarding **claim 2**, Pope and Struhsaker disclose the all the limitation, as discussed in claim 1. Furthermore, Pope further discloses that a LMDS reception processing section (11 in Fig. 1) adapted to receive the radio signal from the LMDS base station (42b, 42c in Fig. 4) and perform a predetermined reception process for the received radio signal for use in the integrated LMDS and WLAN transceiver (Fig. 4) apparatus (Fig. 3, 4 and column 5, lines 21 – column 6, lines 47). Pope teaches that a LMDS transmission processing section (11 in Fig. 1) adapted to perform a predetermined transmission process for the radio signal to be transmitted to the LMDS base station (Fig. 3, 4 and column 5, lines 21 – column 6, lines 47). Pope teaches that a digital baseband processor (5 in Fig. 1) adapted to perform a digital signal process (DSP) for the radio signal applied thereto from the LMDS reception processing section or the radio signal applied to the LMDS transmission processing section therefrom (Fig. 1, 4, column 3, lines 31 – 47, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 3**, Pope and Struhsaker disclose the all the limitation, as discussed in claim 1. Furthermore, Pope further discloses that a WLAN reception processing section adapted to receive the radio signal from the plurality of WLAN terminals (10 in Fig. 4) and perform a predetermined reception process for the received radio signal for application to the digital baseband (baseband is simpler than broadband)

processor (Fig. 3, 4, column 2, lines 20 – 58, and column 5, lines 21 – column 6, lines 47). Pope teaches that a WLAN transmission processing section (Fig. 3) adapted to receive a signal from the digital baseband processor and perform a predetermined transmission process for the received signal for radio transmission to the plurality of WLAN terminals (Fig. 3, 4, column 2, lines 20 – 58, and column 5, lines 21 – column 6, lines 47). Pope teaches that a medium access controller (MAC) (controller for processing used to control access to a medium that shared between LMDS and WLAN (LAN attached devices)) adapted to supply the signal applied thereto from the digital baseband processor to the WLAN transmission processing section or supply the signal applied thereto from the WLAN reception processing section to the digital baseband processor (Fig. 3, 4, column 2, lines 20 – 58, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 4**, Pope and Struhsaker disclose the all the limitation, as discussed in claim 1. Furthermore, Pope further discloses that a duplexer adapted to apply a radio signal received by a first antenna (13 in Fig. 2) to the LMDS reception processing section or the WLAN reception processing section (Fig. 3, 4, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47). Pope teaches that a triplexer adapted to apply a radio signal received by a second antenna (14 in Fig. 2) to the LMDS reception processing section or apply a signal supplied thereto from the LMDS transmission processing section or the WLAN transmission processing section to the second antenna (Fig. 3, 4, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 5**, Pope does not specifically disclose the limitation “the WLL transceiver section and the WLAN transceiver section share one phase locked loop (PLL)

using a plurality of distributors”. However, Struhsaker discloses the limitation “the WLL transceiver section and the WLAN transceiver section share one phase locked loop (PLL) using a plurality of distributors” (Fig. 1, 2, column 8, lines 23 – 60, and column 12, table 4, where teaches WLL and WLAN share channel with phase lock). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Pope system as taught by Struhsaker. Doing so would enhance the signal adaptability and efficient adjustment for signal stability in wireless communication system.

Regarding **claim 6**, Pope and Struhsaker disclose the all the limitation, as discussed in claim 1. Furthermore, Pope further discloses that the integrated LMDS and WLAN transceiver apparatus is included in a specific computer, and allows the specific computer to function as a server of the plurality of WLAN terminals (Fig. 1 and column 3, lines 21 – 65).

Regarding **claim 7**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that the integrated LMDS and WLAN transceiver apparatus includes the duplexer and the triplexer in order to distribute and apply the signals collected by the antennas to each of the LMDS and WLAN transceiver sections (Fig. 3, 4, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 8**, Pope and Struhsaker disclose the all the limitation, as discussed in claim 1. Furthermore, Pope further discloses that the plurality of WLAN

terminals uses a conventional WLAN radio transmitter included in the plurality of WLAN terminals as it is (Fig. 3, 4 and column 5, lines 21 – column 6, lines 47).

Regarding **claim 9**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that the duplexer is connected to the first antenna used as a receive-only antenna (Fig. 2, 4 and column 4, lines 24 – 67).

Regarding **claim 10**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that the antenna unit uses a space diversity antenna for preventing a fading phenomenon of a signal received through a multipath so that the first antenna and the second antenna of the diversity antenna are spaced apart from each other (Fig. 3, 4, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 11**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that the space diversity antenna is shared by the LMDS transceiver section and the WLAN transceiver section (Fig. 3, 4, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 12**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 3.

Regarding **claim 13**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 2.

Regarding **claim 14**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 5.



Regarding **claim 15**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 12.

Regarding **claim 16**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 5.

Regarding **claim 17**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 4 and 7.

Regarding **claim 18**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 12. Furthermore, Pope further discloses that a memory (6 in Fig. 1) storing data and instructions to enable the processing of data to conform to a LMDS signaling scheme and to enable the processing of data to conform to a WLAN signaling scheme (column 2, lines 10 – 58 and Fig. 1, 3).

Regarding **claim 19**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 5.

Regarding **claim 20**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 10.

Regarding **claim 21**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that a transmitting channel coupled to a first antenna of the antenna unit (19 in Fig. 2); and a dual input receiving channel (multipoint) coupled to a second and third antenna (13, 14 in Fig. 2) of the antenna unit (Fig. 2, 3, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 22**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that a duplexer in the antenna unit, allowing a single antenna to serve both the transmitting channel and also the receiving channel, according to the state of the duplexer (Fig. 2 and column 4, lines 24 – 67).

Regarding **claims 23 and 28**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. However, Pope and Struhsaker do not specifically disclose the limitation “one or more of the elements from the group consisting of AGC's, modulators, mixers, filters, D/A converters and power amplifiers (Fig. 1, 2 and column 3, lines 21 – column 4, lines 67).

Regarding **claims 24 and 29**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that one or more of the elements from the group consisting of low noise amplifiers, AGC's, demodulators, mixers, filters, and A/D converters (Fig. 1, 2 and column 3, lines 21 – column 4, lines 67).

Regarding **claim 25**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 2.

Regarding **claim 26**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 4. Furthermore, Pope further discloses that a transmitting channel coupled to a fourth antenna of the antenna unit; and a receiving channel coupled to a fifth and a sixth antenna of the antenna unit (Fig. 2, 3, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47).

Regarding **claim 27**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 4 and 21.

Regarding **claim 30**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 3 and 18.

Regarding **claim 31**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 3. Furthermore, Pope further discloses that the medium access controller is further equipped to process the digital data for transfer to or from the LMDS transceiver (Fig. 3, 4 and column 5, lines 21 – column 6, lines 47).

Regarding **claim 32**, Pope and Struhsaker disclose the all the limitation, as discussed in claims 1 and 12. Furthermore, Pope further discloses that a LMDS base station connected to the core network (41 in Fig. 4) (Fig. 3, 4 and column 5, lines 21 – column 6, lines 47). Pope teaches that an apparatus for transferring data from the LMDS base station (42b, 42c in Fig. 4) to or from the plurality of devices connected to the WLAN, said apparatus including means for translating the data between WLAN signaling protocol and the LMDS signaling protocol (Fig. 3, 4, column 4, lines 24 – 67, and column 5, lines 21 – column 6, lines 47).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Forbes, Jr. (US Patent number 6,512,916) discloses Method for Selecting Markets in Which to Deploy Fixed Wireless Communication Systems.

Art Unit: 2684

Larson et al. (US Patent number 6,560,652) discloses Accessing Variable Sized Blocks of Data.

Ge (US Patent number 6,681,100) discloses Smart Amplifier for Time Division Duplex Wireless Applications.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

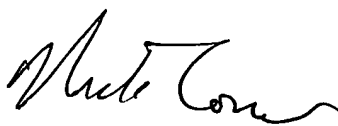
(703) 308-6606 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is (703) 306-5936. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Nay Aung Maung**, can be reached on (703) 308-7745. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L  
April 14, 2004

John J Lee

  
**NICK CORSARO**  
**PATENT EXAMINER**